Table 7.1 - Electricity Net Generation (All Sectors)

(Billion Kilowatthours)

	1980	1990	2000	2001	2010	2020	2025
Coal [1]	1,162	1,591	1,966	1,904	2,245	2,553	2,759
Petroleum [2]	246	125	111	126	49	52	61
Natural Gas [3]	346	369	601	613	991	1,449	1,671
Other Gases [4]	NA	10	14	14	7	7	8
Total Fossil Energy	1,754	2,095	2,692	2,657	3,292	4,061	4,499
Nuclear	251	577	754	769	800	807	807
Hydroelectric Pumped Storage[5]	NA	-4	-6	-9	-1	-1	-1
Conventional Hydroelectric [6]	279	291	276	218	306	305	306
Geothermal	5	15	14	14	20	32	37
Wood [7]	0.3	30	38	37	59	70	78
Waste [8]	0.2	13	23	23	31	33	34
Solar Thermal and Photovoltaic	NA	0.4	0.5	0.5	2	3	4
Wind	NA	2	6	6	24	33	36
Total Renewable Energy	285	352	356	297	441	476	495
Generation for Own Use [9]	NA	NA	NA	NA	-202	-230	-254
Other [10]	NA	4	5	5	16	17	17
Total Electricity Generation	2,290	3,024	3,802	3,719	4,343	5,126	5,560

Sources: EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, D.C., November 2002), Table 8.2a, and EIA, *Annual Energy Outlook 2003*, DOE/EIA-0383(2003) (Washington, D.C., January 2003), Tables A8 and A17.

Notes:

Data include electricity-only and combined-heat-and-power (CHP) plants whose primary business is to sell electricity, or electricity and heat, to the public. Through 1988, data are for generation at electric utilities only. Beginning in 1989, data also include generation at independent power producers and the commercial and industrial (end-use) sectors.

[1] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

[2] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

[3] Natural gas, including a small amount of supplemental gaseous fuels. Forecast data include natural gas fired distributed generation and electricity generation from fuel cells.

[4] Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels, including refinery and still gas.

[5] Pumped storage facility production minus energy used for pumping. Data for 1980 included in conventional hydroelectric power.

[6] Hydroelectric data through 1988 are for generation at electric utilities and industrial plants only; beginning in 1989, data also include generation at independent power producers and commercial plants.

[7] Wood, black liquor, and other wood waste.

[8] Municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass.

[9] Includes non-utility and end-use sector generation for own use.

[10] Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Table 7.2 - Net Generation at Electricity-Only Plants

(Billion Kilowatthours)

	1980	1990	2000	2001	2010	2020	2025
Coal [1]	1,162	1,560	1,911	1,848	2,189	2,497	2,703
Petroleum [2]	246	117	98	113	39	43	52
Natural Gas [3]	346	265	399	411	709	1,148	1,342
Other Gases [4]	NA	0	0	0	NA	NA	NA
Total Fossil Energy	1,754	1,942	2,408	2,373	2,937	3,688	4,097
Nuclear	251	577	754	769	800	807	807
Hydroelectric Pumped Storage[5]	NA	-4	-6	-9	-1	-1	-1
Conventional Hydroelectric [6]	276	288	271	214	302	301	301
Geothermal	5	15	14	14	20	32	37
Wood [7]	0.3	5	7	7	21	22	25
Waste [8]	0.2	10	18	17	29	31	31
Solar Thermal and Photovoltaic	NA	0.4	0.5	0.5	1	2	2
Wind	NA	2	6	6	23.6	33	36
Total Renewable Energy	282	322	316	258	396	420	432
Generation for Own Use [9]	NA	NA	NA	NA	-184	-212	-236
Other [10]	NA	0	0	0	5	6	6
Total Electricity Generation	2,286	2,837	3,473	3,391	3,950	4,705	5,103

Sources: EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, D.C., November 2002), Table 8.2b, and EIA, *Annual Energy Outlook 2003*, DOE/EIA-0383(2003) (Washington, D.C., January 2003), Tables A8 and A17.

Notes:

Data are for electricity-only plants in the electric power sector whose primary business is to sell electricity to the public. Historical data include electric utility combined-heat-and-power (CHP) plants. Through 1988, data are for generation at electric utilities only. Beginning in 1989, data also include generation at independent power producers.

[1] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

[2] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

[3] Natural gas, including a small amount of supplemental gaseous fuels. Forecast data include natural gas fired distributed generation and electricity generation from fuel cells.

[4] Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels, including refinery and still gas.

[5] Pumped storage facility production minus energy used for pumping. Data for 1980 included in conventional hydroelectric power.

[6] Hydroelectric data through 1988 are for generation at electric utilities and industrial plants only; beginning in 1989, data also include generation at independent power producers and commercial plants.

[7] Wood, black liquor, and other wood waste.

[8] Municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass.

[9] Includes non-utility and end-use sector generation for own use.

[10] Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Table 7.3 - Electricity Generation at Combined-Heat-and-Power Plants

(Billion Kilowatthours)

	1980	1990	2000	2001	2010	2020	2025
Coal [1]	NA	31	56	56	56	56	56
Petroleum [2]	NA	8	13	13	10	9	9
Natural Gas [3]	NA	104	202	202	282	301	329
Other Gases [4]	NA	10	14	14	7	7	8
Total Fossil Energy	NA	152	284	284	355	373	402
Nuclear	NA	NA	NA	NA	NA	NA	NA
Hydroelectric Pumped Storage	NA	NA	NA	NA	NA	NA	NA
Conventional Hydroelectric [5]	NA	3	4	4	4	4	4
Geothermal	NA	NA	NA	NA	0	0	0
Wood [6]	NA	25	30	30	37	48	54
Waste [7]	NA	3	6	6	2	2	2
Solar Thermal and Photovoltaic	NA	NA	NA	NA	1	1	2
Wind	NA	NA	NA	NA	NA	NA	NA
Total Renewable Energy	NA	30	40	39	5	6	6
Generation for Own Use [8]	NA	NA	NA	NA	-18	-18	-18
Other [9]	NA	4	5	5	11	11	11
Total Electricity Generation	NA	186	329	328	392	422	456

Sources: EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, D.C., November 2002), Table 8.2c, and EIA, *Annual Energy Outlook 2003*, DOE/EIA-0383(2003) (Washington, D.C., January 2003), Tables A8 and A17.

Notes:
Includes combined-heat-and-power (CHP) plants whose primary business is to sell electricity and heat to the public. For 1989-2001, does not include electric utility CHP plants—these are included in " Net Generation at Electricity-Only Plants " in Table 7.2. Also includes commercial and industrial CHP and a small number of commercial electricity-only plants.

[1] Anthracite, bituminous coal, subbituminous coal, lignite, waste coal, and synthetic coal.

[2] Distillate fuel oil, residual fuel oil, petroleum coke, jet fuel, kerosene, other petroleum, and waste oil.

[3] Natural gas, including a small amount of supplemental gaseous fuels. Forecast data include electricity generation from fuel cells.

[4] Blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels, including refinery and still gas.

[5] Includes combined-heat-and-power (CHP) plants that use multiple sources of energy including hydropower.

[6] Wood, black liquor, and other wood waste.

[7] Municipal solid waste, landfill gas, sludge waste, tires, agricultural byproducts, and other biomass.

[8] Includes non-utility and end-use sector generation for own use.

[9] Batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Table 7.4 - Generation and Transmission/Distribution Losses

(Billion kWh)

	1980	1990	2000	2001	2010	2020	2025
Net Generation Delivered	2,290	3,024	3,802	3,719	4,343	5,126	5,560
Generation Losses [1]	4,829	5,890	7,274	7,122	8,304	9,226	9,707
Transmission and Distribution Losses [2]	NA	329	430	361	269	294	314

Sources: Calculated from EIA, *Annual Energy Outlook 2003,* DOE/EIA-0383 (2003), (Washington, D.C., January 2003), Tables A2 and A8 and EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, D.C., November 2002), Tables 2.2b, 8.2b and 8.2c.

Notes:

[1] Generation Losses for all years are calculated by calculating a Gross Generation value in billion kWh by multiplying the energy input in trillion Btu by (1000/3412) and subtracting the Net Generation in billion kWh from the Gross Generation estimate.

[2] Transmission and Distribution Losses = Electricity Needed to be Transmitted - Electricity Sales, where Electricity Needed to be Transmitted = Total Generation from Electric Generators + Cogenerators + Net Imports - Nonutility Generation for Own Use - Generation for Own Use. Energy losses that occur between the point of generation and delivery to the customer, and data collection frame differences and nonsampling error.

Table 7.5 - Electricity Trade

(Billion Kilowatthours)

	1980	1990	2000	2001	2010	2020	2025
Interregional Electricity Trade							
Gross Domestic Firm Power Trade	NA	NA	157	143	103	0	0
Gross Domestic Economy Trade	NA	NA	148	177	200	180	178
Gross Domestic Trade	NA	NA	305	320	303	180	178
International Electricity Trade							
Firm Power Imports from Mexico and Canada	NA	NA	16	12	6	0	0
Economy Imports from Mexico and Canada	NA	NA	28	26	39	24	14
Gross Imports from Mexico and Canada	25	18	49	38	45	24	14
Firm Power Exports to Mexico and Canada	NA	NA	7	7	9	0	0
Economy Exports to Mexico and Canada	NA	NA	7	12	8	8	8
Gross Exports to Canada and Mexico	4	16	15	18	16	8	8

Sources: EIA, *Annual Energy Outlook 2003*, DOE/EIA-0383(2003) (Washington, D.C., January 2003), Table A10 and EIA, *Annual Energy Review 2001*, DOE/EIA-0384(2001) (Washington, D.C., November 2002), Table 8.1.

Notes:

All data are from EIA AEO except Gross Imports and Exports for 1980-2001.